

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Comments received by the U.S. Environmental Protection Agency, Region 9

Thank you for the opportunity to review and comment on the draft permit (NPDES Permit No. HI0020117) for the discharge from the Sand Island WWTP to Mamala Bay, which was public-noticed on August 20, 2014. Overall, we strongly support the draft permit, as it appropriately includes secondary treatment requirements, which will establish discharge control expectations of the permittee that are consistent with national requirements for other POTW wastewater discharges. Additionally, the draft permit includes updated requirements for toxicity, bacteria, and nutrients that are consistent with NPDES permitting regulations and will provide water quality protection for Mamala Bay. We have two concerns that need to be addressed to ensure the permit meets NPDES requirements. Specifically, our concerns focus on the compliance schedule for enterococcus and the regional monitoring activities.

A. Compliance Schedule

It is not clear whether the compliance schedule for the monthly geometric mean effluent limit for enterococcus meets the requirements of 40 CFR 122.47. The fact sheet must demonstrate that the compliance schedule will lead to compliance with the final effluent limit “as soon as possible.” In making this determination, DOH needs to consider the specific steps needed to modify or install treatment facilities, operations or other measures and the time those steps would take. For this facility, the fact sheet states that disinfection facilities already exist and that only minor changes, such as expansion or optimization of treatment may be needed. It is not clear that a 10-year schedule is necessary to implement those changes. The fact sheet must clearly demonstrate that the length of the schedule included in the permit is no longer than necessary to comply with the final effluent limit.

Response: The duration of the compliance schedule shall remain as written in the permit to allow the Permittee an opportunity to revisit their choice in disinfection technology to meet demands for energy efficiency with the rising cost of the electricity required to run the current UV disinfection facility. See comments from Mr. Michael Chang of Hawaii Energy.

B. Regional Monitoring

The public notice permit includes a provision allowing the permittee to develop and implement a regional monitoring program in lieu of performing some of the monitoring required by the permit. It is not clear which monitoring requirements in the permit would be waived if this regional program went into effect or for how long the waiver would be effective. The language also erroneously provides the permittee shall “identify the designated uses and existing uses of the receiving water,” where only DOH has the authority to perform such a task. Development of a regional monitoring program is complex and involves multiple parties. We

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

recommend this language be removed and replaced with a reopener provision, which will allow modification of the permit pursuant to 40 CFR 122.62 to incorporate changes to the monitoring requirements once a regional monitoring program plan has been developed.

Response: This section has been revised to the following:

“The intent of regional monitoring activities is to assess whether the entire receiving water body meets Water Quality Standards and to determine any sources that may be causing or contributing to a non-compliance with Water Quality Standards. Regional monitoring activities are meant to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the region. The Permittee is required to:

- a. Take the lead, coordinate, organize, and facilitate the implementation of the regional monitoring activities with all individual NPDES permit holders and MS4 permit holders discharging into the receiving waters, EPA, DOH, and other participating government agencies and private entities.
- b. Develop and submit to DOH the detailed plan for regional monitoring in the receiving waters within 2 years from the issuance date of this permit. The final plan must be acceptable to DOH prior to its implementation.
- c. Initiate implementation of the DOH accepted regional monitoring activities plan within 2.75 years from the issuance date of this permit. Regional monitoring activities and data collection must be performed for at least 1 year to account for seasonal variation.
- d. Complete and submit a final regional monitoring activities report detailing all of the requirements, findings, and conclusions to the DOH within 4.5 years from the issuance date of this permit.

This permit may be modified pursuant to 40 CFR 122.62 to incorporate changes to the monitoring requirements once a regional monitoring program plan has been developed. During the implementation of the final regional monitoring program plan, the Permittee's receiving water sampling and analytical effort will be reallocated to provide a regional assessment of the impact of the discharge. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources.”

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Comments received from the City and County of Honolulu, Department of Environmental Services

FACT SHEET

1. Page 3, Part A Table F-1 - The correct zip code is 96819, not 96707.

Response: The fact sheet was revised as requested.

2. Page 3, Part B.1, 2nd sentence - Delete and replace the sentence with the following, "The facility has a design average flow of 90 MGD and provides primary treatment of wastewater for approximately 405,000 people in the Sand Island Basin."

The 90 MGD is the "design average" daily flow capacity of the Sand Island (SIWWTP).

Response: The fact sheet was revised as requested.

3. Page 4, Part B.1, 8th sentence - Replace the words "high pressure" with "medium pressure." The existing UV lamps are medium pressure lamps.

Response: The fact sheet was revised as requested.

4. Page 14, Part D.2.c.(2) - Correct the time period of analyses for chlordane, dieldrin and DDT. The reasonable potential analyses (RPA) worksheets provided by Department of Health ("DOH") indicate different time periods for analysis than DOH's RPA worksheets.

Response: The fact sheet was revised as requested.

5. Page 14, Part D.2.c.(3) - DOH used the wrong dilution values. DOH failed to consider the updated Outfall Dilution Analysis Technical Memorandum (TM) dated October 15, 2013 and submitted by the City and County of Honolulu ("CCH") to DOH on October 28, 2013 via letter (EMC 13-169). The October 2013 Outfall Dilution Analysis updates the April 3, 2013 dilution analysis to incorporate the results of numerous discussions with PG Environmental, DOH's permit writer regarding the dilution model inputs.

Response: All pertinent information for the reissuance of the permit should have been submitted with the permit application. As documented in the Fact Sheet starting from page 14, dilution studies submitted by the Permittee on September 14, 2011 and April 3, 2012 were reviewed and found deficient. After much consultation with DOH's contractor, the Permittee submitted another dilution

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

study on October 28, 2013, after the preparation of the draft permit. Like the previous studies, the October 28, 2013 technical memorandum did not use all the available ambient density profile data for the dilution analysis. The DOH's contractor informed the Permittee of this deficiency with the previous two studies, however, an abbreviated data set was also used with their most recent submittal. Using an abbreviated data set is not consistent with EPA's *Initial Mixing Characteristic of Municipal Ocean Discharges* document which requires that "worst-case" conditions be evaluated using a combination of conservative values for conditions affecting initial dilution because it does not take into account all available data.

6. Pages 18 & 19, Part D.2.c(4), Table F-7 - The dilution values (i.e., 103:1 and 294:1) reported in Table F-7 and used in DOH's RPA calculations are inappropriate. The October 2013 Outfall Dilution Analysis specifies a minimum dilution of 228.0:1 and an average dilution of 757.3:1 at the ZOM boundary. With enterococcus die-off, the report also specifies a minimum dilution of 235.46:1 and an average dilution of 5,117.2:1. The October 2013 dilution values should be used for the RPA analyses.

Response: See Response to Comment 5.

7. Page 23, Part D.2.d.(3) - DOH should not use a minimum dilution of 94:1 or an average dilution of 294:1 for the reasons set forth in Comments #5 and #6.

Response: See Response to Comment 5.

8. Page 24, Part D.2.item (a) - Reasons why reasonable potential does not exist for chlordane and why there should not be an effluent discharge limitation for chlordane are provided in Attachment A.1.

Response: The receiving water does not have to be listed as impaired for a discharge to have reasonable potential to exceed water quality standards. The reasonable potential analysis (RPA) and effluent limitations are based on the applicable water quality standards specified in HAR 11-54. These standards remain applicable until HAR 11-54 is revised to reflect any updated standards. In accordance with the EPA's Technical Support Document, the RPA is based on the maximum reported effluent concentration, which was not disputed. Therefore, despite the Permittee's claims regarding missing and incorrect data, the RPA remains valid. Also, in this case DOH used data in the RPA that the Permittee reported and certified as representative, true, accurate, and complete. The DOH assumed that the data reported and certified was valid. Otherwise submission of such data would constitute a knowing violation of Hawaii Revised Statutes (HRS), Chapter 342D.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

9. Page 26, item (b) - Reasons why reasonable potential does not exist for dieldrin and why there should not be an effluent discharge limitation for dieldrin are provided in Attachment A.1.

Response: The receiving water does not have to be listed as impaired for a discharge to have reasonable potential to exceed water quality standards. The RPA and effluent limitations are based on the applicable water quality standards specified in HAR 11-54. These standards remain applicable until HAR 11-54 is revised to reflect any updated standards. In accordance with the EPA's Technical Support Document, the RPA is based on the maximum reported effluent concentration. Therefore, despite the Permittee's claims regarding missing and incorrect data, the RPA remains valid. Also, in this case DOH used data in the RPA that the Permittee reported and certified as representative, true, accurate, and complete. The DOH assumed that the data reported and certified was valid. Otherwise submission of such data would constitute a knowing violation of HRS, Chapter 342D.

10. Page 27, item (c) - There are no validated detections of DDT. Reasons why reasonable potential does not exist for DDT and why there should not be an effluent discharge limitation for DDT are provided in Attachment A.1.

Response: The receiving water does not have to be listed as impaired for a discharge to have reasonable potential to exceed water quality standards. The RPA and effluent limitations are based on the applicable water quality standards specified in HAR 11-54. These standards remain applicable until HAR 11-54 is revised to reflect any updated standards. In accordance with the EPA's Technical Support Document, the RPA is based on the maximum reported effluent concentration. Therefore, despite the Permittee's claims regarding missing and incorrect data, the RPA remains valid. Also, in this case DOH used data in the RPA that the Permittee reported and certified as representative, true, accurate, and complete. The DOH assumed that the data reported and certified was valid. Otherwise submission of such data would constitute a knowing violation of HRS, Chapter 342D.

11. Pages 24-28 - Using the current State Water Quality Standards on Human Health is inappropriate for the carcinogenic compounds dieldrin, chlordane, and DDT. The water quality criterion for chlordane, dieldrin, and DDT was based on human health using carcinogenic endpoints in the calculation. This calculation is conservative in terms of cancer potency and bio-concentration factors.

On June 16, 2009, the Governor of the State of Hawaii signed legislation that conforms the State Water Quality Standards for chlordane and dieldrin to the current federal standards as set forth in the latest EPA National Recommended Water Quality Criteria (Office of Science and Technology, 2002 & 2006) which incorporate

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

over 20 years of nationwide scientific research concerning the carcinogenicity of toxic pollutants.

Response: The RPA and effluent limitations are based on the applicable water quality standards specified in HAR 11-54 and remain applicable until HAR 11-54 is revised to reflect any updated standards.

12. Pages 24-27 - In December 2009, DOH amended the State water quality standards (HAR § 11-54-4(b)(3)) for chlordane and dieldrin through its rulemaking process. This amendment was approved by the Governor on January 25, 2010 and submitted to EPA for its approval on February 16, 2010. The DOH Rationale document for the updated water quality standards provides the State's conclusions regarding what is a risk to human health and this information should have been considered in connection with the proposed water quality based effluent limits in the draft permit for chlordane and dieldrin.

Response: The RPA and effluent limitations are based on the applicable water quality standards specified in HAR 11-54 and remain applicable until HAR 11-54 is revised to reflect any updated standards.

13. Page 28, Page 28, Part D.2.d.(3)(c)ii - The maximum effluent concentration for DDT of 0.27 ug/L is incorrect. See Attachment A 1.

Response: The RPA used data that the Permittee reported and certified as representative, true, accurate, and complete. The DOH assumed that the data reported and certified was valid. Otherwise submission of such data would constitute a knowing violation of HRS, Chapter 342D. If the results of testing during this permit term show that DDT is not in the effluent, then the requirement for sampling for this parameter may be removed when the permit renewed.

14. Page 28, Part D.2.e - The determination that a reasonable potential exists to exceed water quality standards for ammonia nitrogen is contradicted by the fact that the receiving water is not impaired. As the Fact Sheet, page 5, acknowledges "CWA Section 303(d) requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources." Treated effluent is discharged to the Pacific Ocean from the Sand Island Ocean Outfall Serial No. 001 through a diffuser approximately 9,100 feet offshore and 230 feet below the water. The location of the Sand Island Ocean Outfall Serial No.001 in the Pacific Ocean is not listed as an impaired water body in the 2012 State of Hawaii Water Quality Monitoring and Assessment Report: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress pursuant to Sections § 303(d) and § 305(b), Clean Water Act. TMDLs are the process for evaluating the causes of any impairment. No TMDLs have been established or are contemplated for this water body.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Additional reasons why the ammonia nutrient discharge limitation should be deleted are presented in Attachment A.1.

Response: The 303(d) list may not reflect water quality within the immediate vicinity of the outfall. Reasonable potential was based on the monitoring results at the boundary of the Zone of Mixing, where water quality standards should be met. Monitoring results at the boundary of the Zone of Mixing for SIWWTP showed exceedances of the water quality standards for ammonia nitrogen, therefore establishing reasonable potential.

15. Page 29, Part D.2.e.i - In absence of a designation in the 1998 NPDES permit, CCH has designated and been using monitoring stations D1, E1, D5, and E5 as the appropriate control stations. The stations were selected as best representing ambient conditions since they are the farthest stations from the outfall's influence to its east and west side and is along the 50 and 100 meter contours bracketing the depth of the diffuser. DOH should use these stations instead of D4 and E4. Using DOH's methodology and the monitoring data from the appropriate control stations, the geometric mean summary in part iii. should be listed as follows:

Year	Result (µg/L)
2009	1.51
2010	1.63
2011	2.07
2012	2.23
2013	2.41

The annual geometric means from 2009 through 2013 is still under 90 percent of the applicable WQS (i.e., 3.15 ug/L) and therefore the conclusion remains unchanged that assimilative capacity appears to be present in the receiving waters.

Response: Comment acknowledged.

16. Page 30, Part D.2.e.iv - There is no basis to add an ammonia nitrogen discharge limitation of 47,894 ug/L. See Attachment A.1.

Response: The determination of reasonable potential is based on EPA's TSD and EPA guidance. The receiving water does not have to be listed as impaired for a discharge to have reasonable potential to exceed water quality standards. Receiving water data reported and certified by the Permittee was used in the RPA. It is standard to use one half of the detection level when it is reported to be less than the detection level. HAR, Chapter 11-54 contains water quality standards for ammonia nitrogen and therefore this must be regulated as part of the NPDES permit where reasonable potential is determined.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

17. Pages 31-34, Part D.2.g - There is no basis for establishing effluent limitations for enterococcus at the Sand Island WWTP. The enterococcus effluent discharge limitation and the provisions to upgrade the Sand Island WWTP to comply with the final enterococcus discharge limitation should be deleted for the following reasons:

In a letter dated September 5, 2013 (EMC 13-152) to the DOH Director, CCH stated concerns with the 18,000 cfu/100 mL daily limitation which is based on the outdated 7 cfu/100 mL geometric mean for State recreational waters within 300 meters of the shoreline. The current water quality standard for enterococcus of 35 cfu/100 mL was approved by EPA in March 2010. Therefore the daily limitation should be updated. Also see Attachment A.1 for other reasons.

Response: The Permittee was required to construct and operate a facility capable of meeting a discharge limitation of 18,000 CFU/100 mL for enterococcus and an effluent limitation based on this requirement was established in the previous permit. Because this limitation has been effective since July 21, 2002, it must be carried over based on anti-backsliding regulations.

18. Page 32, Part D.2.g(1), 1st and 2nd paragraphs - It is inappropriate to compare the Sand Island effluent enterococcus concentration multiplied by the initial dilution to the recommended State water quality standard single sample max (501 cfu/100 mL) and applicable geometric mean criteria (i.e., 35 cfu/100 mL) for receiving waters. A geometric mean should be calculated using the effluent enterococcus concentrations measured in a calendar month multiplied by the appropriate dilution factor, at the edge of the ZOM. Additionally the single sample max is inappropriately being used to determine a discharge limitation for the SIWWTP since it is not a regulatory receiving water quality standard but rather serves as a threshold number to issue a beach warning in recreational waters that are infrequently used.

Response: The SIWWTP effluent concentration multiplied by the initial dilution was not compared to the State water quality standard single sample max and applicable geometric mean criteria for receiving waters. The requirement remains as written in the draft permit. Although it may be infrequent, human contact within the zone of mixing may occur, thus for the protection of human health due to the potential for acute illness from pathogens the initial dilution was determined to be appropriate. The use of the initial dilution is intended to be protective of water quality standards, beneficial uses, and human health. Human health may be impacted from short term exposure to elevated concentrations of pathogens, thus the provided dilution must be conservative to account for all reasonable discharge scenarios. The rationale for the Beach Act, which is included in 40 CFR 131.41 for Hawaii, explicitly states that a single sample maximum may be used as limitations in NPDES permits.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

19. Page 33. Compliance Schedule - The Compliance Schedule should be deleted because there is no reasonable potential for enterococcus and the schedule is wasteful and unnecessary. See Attachment A.1 for the rationale.

The assumption for the schedule that “the permittee may only need to optimize or expand the capacity of these facilities in order to comply with the final monthly geometric mean WQBEL...by June 30, 2024” is incorrect. Any schedule should be evaluated in light of the Consent Decree schedule for secondary treatment upgrades to the plant, the cost of the treatment capabilities and the incremental benefits to the environment.

For Task #1, the fiscal year 2015 budget has already been approved by City Council and does not include a source of funding for an alternative treatment study, as CCH was not provided with any prior notice that such a study was contemplated. CCH does not have a funding source for this task.

For Task #2, one year is not a sufficient time period to conduct a technical study to determine whether a major wastewater treatment process upgrade would first be required, or if the assumed simple solution of optimizing or expanding the existing facility will be cost effective. Evaluation of the upgrades to the Sand Island WWTP are being conducted in accordance with a schedule previously agreed to by EPA and DOH that considers the detailed design and construction phasing of the processes. Any technical study would include consideration of the following:

- 1) UV dosage needed to achieve the final monthly geometric mean;
- 2) Suspended particle distribution and transmissivity of the plant effluent and the impact on channel capacity as well as the hydraulics of the entire facility should reduced spacing between lamps to achieve inactivation be needed.

The significant increase in UV dosage will result in more electric power and generated waste heat to the environment. Solutions to these challenges are unknown, but would involve expansion of HECO's power supply facilities, expansion of electrical distribution within the plant, expansion of back-up generation facilities, and replacing the associated existing electrical equipment at the UV building and ancillary systems. The improvements would ultimately increase the deleterious carbon footprint of the process.

Task 5 is inconsistent with the Consent Decree schedule. Sand Island is required to be upgraded to meet secondary treatment standards by December 31, 2035, with the possibility of extending the deadline to December 31, 2038 if CCH demonstrates that an earlier deadline is not technically feasible, or would impose undue financial hardship. There is no technical basis to support DOH's assumption that the UV facility can be upgraded to achieve the proposed Enterococcus limits by a Compliance Schedule date of June 1, 2024. Such a proposal is an unnecessary

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

and wasteful financial burden on CCH's sewer customers, on top of the already high financial burden contemplated and agreed to with the Consent Decree.

Any compliance schedule should be consistent with the Consent Decree provisions and have a technically feasible justification and include Force Majeure provisions and related dispute resolution procedures. It would be reasonable that any compliance schedule should acknowledge the impossibility of meeting deadlines, especially in the event of Force Majeure situations that impact the critical path schedule.

Response: The DOH has determined that reasonable potential exists for the facility to exceed the discharge limitation. In the Tentative Decision Document (TDD) regarding the Permittee's application for a 301(h) Waiver, EPA also concluded that "bacterial concentrations associated with the discharge of wastewater from the Sand Island outfall do not meet current water quality standards without disinfection." EPA's January 14, 2008 letter to the Permittee also stated that "[a]s a result of the promulgation [of the BEACH Act], bacteria standards now apply also in state waters beyond 300 meters from shore. Thus, it may be that a more, not less, stringent bacteria limitation would now be appropriate." Therefore the compliance schedule shall remain in the permit.

As a result of the Permittee bringing to our attention that some deadlines have already passed, the compliance schedule has been adjusted on the front end to allow more time for planning and design. However, in keeping with the consent decree, the deadline to execute a construction contract has remained the same. As brought up by EPA's comment on the draft permit (see page 1 of this document), the end result of the compliance schedule must be met "as soon as possible." Therefore, provisions for missed deadlines that are allowed in the consent decree are not included in the compliance schedule.

20. Page 36, Part D.2.h – The influent waste stream concentration (IWC) of 0.97% specified for the Whole Effluent Toxicity test is incorrect due to the incorrect minimum dilution being used. The correct minimum dilution to be used for determining the IWC is 228.0:1.

Response: See Response to Item 5.

21. Page 37, Part D.2h., 4th paragraph, 1st sentence - Revise "The acute and chronic biological effect levels (b values of 20% and 25%, respectively) incorporated into the TST define EPA's unacceptable risks to aquatic organisms" to "The acute and chronic biological effect levels (effect levels of 20% and 25%, respectively or b values of 0.80 and 0.75, respectively) incorporated into the TST define EPA's unacceptable risks to aquatic organisms..." Reference is EPA833-R-10-004, June 2010.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Response: The fact sheet was revised as requested.

22. Pages 39, Part D.2.i, Table F-9 – Footnote 6: remove references to 2,4'-DDT, 2,4'-DDE and 2,4'-DDD.

40 CFR 136 provides approved analytical methods for DDT 4,4'- isomers, not for DDT 2,4'- isomers. The 2,4'- isomers are not Clean Water Act analytes and should not require monitoring in the permit.

Response: The fact sheet was revised as requested.

23. Page 41, Part E.1, Table F-10 - It is inappropriate to directly compare Sand Island effluent sampling results to State Water Quality Standards which apply to the receiving waters.

Response: Table F-9 was intended for informative purposes.

24. Page 47, Part E.3.c(2), 7th line – change “probably” to “probable.”

Response: The fact sheet was revised as requested.

25. Page 49, Part F.1 - Remove DDT from the influent monitoring program as there were no validated detections of DDT. DDT has no reasonable potential to cause an exceedance of the State water quality standards. See Attachment A.1.

Response: See response to Comment 10.

26. Page 51, F.4.b. 1st paragraph - Stations R1, R2 and R3 should be deleted from the nearshore monitoring program. As stated in its September 1, 1998 (WMC 98-764) letter to DOH, sampling was conducted at these stations to obtain data regarding sites that are dominated by the influence from nonpoint sources, not for determining compliance to open coastal waters.

Response: The fact sheet shall remain as written.

27. Page 51, Part F.4.c., 2nd sentence - Replace “E3” in the sentence with “E5.” There are five “E” stations, E1 through E5.

Response: The fact sheet was revised as requested.

28. Page 52, Part F.4.e - The permit should specify that sampling occur at either of the new control stations (i.e., FR3 or FR4) and not both. There may be situations in

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

which one of the control stations can be sampled when the other station is inaccessible.

Response: This condition shall remain as written to be consistent with the previous permit and the Honouliuli Wastewater Treatment Plant permit conditions.

29. Page 54, Part G.4.a, 2nd paragraph, last sentence - Replace "21 non-categorical significant industrial users" with "6 non-categorical significant users".

Response: The fact sheet was revised as requested.

DRAFT PERMIT

30. Page 1 – The Permittee is the City and County of Honolulu, Department of Environmental Services. The signature block should read:

"Director, Department of Health
State of Hawaii."

Response: The City and County of Honolulu, Department of Environmental Services is listed as the Permittee. The signature block remains the same as this is standard with all NPDES permits issued by the Department of Health.

31. Page 3, Part A.1, 1st and 2nd Table - In both tables, it is appropriate to move footnote marker "1" from "Discharge Limitations" to "lbs/day" under the "Units" column. Alternatively, the formula should replace "flow (MGD)" with the SIWWTP's design flow of 90 MGD if the footnote marker "1" remains with "Discharge Limitations" label.

Response: The current location of footnote "1" in both tables are appropriate.

32. Page 3, Part A, 1st Table – The 2010 Consent Decree provides for interim effluent limits that the Sand Island WWTP must meet until it achieves full secondary treatment. The terms of the proposed draft NPDES permit is subject to the discharge limitations of the 2010 Consent Decree, therefore, delete the BOD and TSS discharge limitations in the Table and replace with the following interim effluent limitations:

BOD:

Average Monthly – 119 mg/L (89,414 lbs/day) Average Weekly – 122 mg/L (91,594 lbs/day) Minimum percent removal of BOD, 30%.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

TSS:

Average Monthly – 48 mg/L (36,349 lbs/day) Average Weekly – 50 mg/L
(37,403 lbs/day) Minimum percent removal of TSS, 60%.

Also include a footnote that these interim limitations will be updated should they be revised in the 2010 Consent Decree.

The required monitoring Measurement Frequency for BOD and TSS is “Daily”.

Response: The permit must contain secondary treatment requirements as required by Section 301 of the Clean Water Act and described in 40 CFR Part 133. The Consent Decree is a stand-alone document and should not be referenced in the permit since it allows for less than secondary treatment.

33. Pages 3-4, Part A.1, 2nd Table of Effluent Limitations and Monitoring Requirements - On footnote #5, the assumptions leading to the schedule for compliance with the proposed Enterococcus discharge limitation are inappropriate. Compliance date should coincide with the final completion dates for secondary treatment in paragraph 31 of the Consent Decree. Also see comment #19 above.

Delete footnote #10 to require mathematically compositing three required individual grab samples by flow to a single Total Petroleum Hydrocarbons (TPH) concentration. Similarly to the Total Oil and Grease (TOG) sampling requirement, a single grab sample should be taken for the influent and effluent TPH. Single grab sampling for TOG and TPH are required under the recently issued NPDES permits for the Kailua RWWTP and Honouliuli WWTP.

Response: See response to Comment 19 regarding the compliance schedule. The requirement under Footnote #10 is consistent with the previous permit and shall remain as written.

34. Page 3, Part A.1., 2nd Table of Effluent Limitations and Monitoring Requirements - Delete discharge limitations for enterococcus. It is inappropriate and unjustifiable for the Department of Health to impose numerical effluent limitations for Enterococcus. Correcting the reasonable potential analysis demonstrates that there is no reasonable potential for the SIWWTP's discharge to cause or contribute to exceedances of State WQS. See Attachment A.1.

Response: See response to Comment 17.

35. Page 3, Part A.1., 2nd Table of Effluent Limitations and Monitoring Requirements - Delete discharge limitations and monitoring requirements for chlordane, dieldrin, and DDT. Correcting the reasonable potential analysis demonstrates that there is

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

no reasonable potential for the Sand Island WWTP's discharge to cause or contribute to exceedances of State WQS. See Attachment A.1.

Response: See responses to Comments 8, 9, 10, 11 and 12.

36. Page 3, Part A.1., 2nd Table of Effluent Limitations and Monitoring Requirements - Delete discharge limitations for ammonia nitrogen. It is inappropriate and unjustifiable for the Department of Health to impose numerical effluent limitations for ammonia nitrogen. Correcting the reasonable potential analysis demonstrates that there is no reasonable potential for the SIWWTP's discharge of nutrients to cause or contribute to an exceedance of State WQS. Also see Attachment A.1.

Response: See responses to Comments 14 and 16.

37. Page 4, Part A.1, 2nd table - Footnote 4: Correct to remove references to "2,4'-DDT; 2,4'-DDE and 2,4'-DDD." See comment #23 above.

Footnote 12: Remove the last sentence, "Results shall be submitted with the discharge monitoring report for the month in which the sampling occurred." The reason for the request is that the actual laboratory analyses and QA/QC review cannot be completed and submitted to DOH within a month. It is appropriate given that the semi-annual DMRs on "Remaining Pollutants" are due within 60 days from the end of the monitoring period.

Response: References to "2,4'-DDT; 2,4'-DDE and 2,4'-DDD" were removed as requested. Footnote 12 was revised to the following:

"Results shall be submitted by the 28th day of the month following the completed monitoring period - July 28th (for the first half of the calendar year) and January 28th for the second half of the calendar year."

38. Page 5, Part A.6.a - Delete the requirement for interim effluent limitations for enterococcus. See Attachment A.1.

Response: See response to Comment 17. Interim limitations based on treatment plant performance were established in the compliance schedule to provide the City more time to comply with the limitation.

39. Page 5, Part A.6.a, Footnote 1 - Delete the requirement to sample between 12 noon to 3:00 pm to obtain a grab sample; there is no rational basis for this requirement.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

The updated method for Enterococci is Method 1600, Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl- β -D-Glucoside Agar(mEI) (EPA 821-R-09-016).

Response: The footnote was revised as requested.

40. Page 5, Item 6.b – Delete the requirement for final effluent limitations for enterococcus, all tasks and compliance dates related to the requirement, and the compliance schedule for enterococcus including the compliance dates. The UV facility compliance schedule is wasteful and unnecessary as there are no enterococcus exceedances. Also see Comment #19 and Attachment A.1.

Response: The enterococcus limits are required for the Permittee to meet water quality standards. The EPA's Tentative Determination Document studied the receiving water data collected prior to the initiation of the disinfection facility and during its operation and concluded that "...bacterial concentrations associated with the discharge of wastewater from the Sand Island outfall do not meet current water quality standards without disinfection." Also see response to Comment 17.

41. Page 8, Part B.1 - Add a third paragraph that reads "It shall not be considered a non-compliance of the whole effluent toxicity requirements if it can be proven to the Director's satisfaction that the inability in obtaining gametes for testing was due to circumstances beyond the Permittee's control."

Response: The paragraph was not added to this section because the Permittee should be able to regularly collect gametes.

42. Page 8, Part B.3, 2nd sentence - Sentence is not grammatically correct. Revise the sentence to read, "For this discharge, the determination of "Pass" or "Fail" from a single-effluent concentration chronic toxicity test at the applicable IWC will use the Test of Significant Toxicity (TST) approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010).

Response: This sentence is grammatically correct.

43. Page 9, Part B.4.c - Revise the first sentence to read, "Effluent dilution water and control water shall be receiving water or lab water, as described in the test methods manual *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995).

Laboratory water does not have the correct salinity and minerals needed to ensure good fertilization of urchin gametes. Salinity adjustment and mineral addition to

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

produce artificial seawater could introduce toxic components that affect the viability of urchin sperm and eggs. In several studies, the Water Quality Laboratory has confirmed poor sea urchin sperm fertilization rates in artificial sea water.

Furthermore, the manual Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136, 1995) states that either lab water or receiving water may be used for the effluent dilution water or control water. This language is used in the Kailua RWWTP NPDES permit No. HI 0021296 issued on February 14, 2014.

Response: This section shall remain as written.

44. Page 11, Part B.6.e - Remove item (2) as a listed item required by the TIE plan. The evaluation of available operations and effluent data will be part of the Information and Data Acquisition phase when executing a Toxicity Reduction Evaluation plan.

Response: This section shall remain as written.

45. Page 12, Part B.7.a - Percent mean response should be expressed as percent effect. The following reference is provided to clarify the suggested correction: EPA 833-R-10-003 June 2010. Equation E-1, Page E-4. The proper terminology is **mean effect at the IWC, expressed in %**.

$$\% \text{ Effect at IWC} = \frac{\text{Mean Control Response} - \text{Mean Response at IWC} \times 100}{\text{Mean Control Response}}$$

Response: Comment acknowledged however this section shall remain as written to be consistent with other permits.

46. Page 12, Part B.7.c - Revise the first sentence of the paragraph to specify the methods for written notification and reporting requirements as follows: "The Permittee shall notify the Director in writing (postmarked, faxed, or emailed) within five (5) business days of a test result that is reported as "Fail."

Written reports submitted by facsimile transmission or email are appropriate methods for notification of the outcome of a WET test result reported as a "Fail."

Response: In accordance with HAR, Section 11-55-07 and the Standard Permit Conditions, Item 5.b, all submittals should be signed by the owner or authorized representative and contain the certification statement.

47. Page 12, Part B.7.c. - Change from "within five (5) calendar days" to "within five (5) **working** days." The reason for this change is that it will be difficult to meet the

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

calendar deadline for the written submission if there is a weekend or an observed holiday around the time of the WET exceedance occurrence.

Response: This part was changed from “within five (5) calendar days” to “within five (5) business days.”

48. Page 14, Part C.1.a(2) - Clarify that these sampling locations are “within 300 meters” as “The draft permit establishes these criteria for recreational areas, as described in Part C of the draft permit, to be consistent with HAR, Section 11-54-8(b).” (see the Fact Sheet Page 44.).

Response: This section applies to locations within 300 meters of the shoreline.

49. Page 18, Part D.3 - CCH has major concerns with the proposed Regional Monitoring Requirement:

- 1) It appears that the undertaking of the regional monitoring described in the draft permit should be performed by the State instead of CCH:

The draft permit states that “the intent of the regional monitoring program is to assess whether the entire receiving water body meets the Water Quality Standards.” Clean Water Act Section 303(d) requires States to identify water bodies where water quality standards are not being met. DOH is required by the Clean Water Act (CWA) § 303(d) and § 305(b) to report on the State's water quality on a two year cycle. CWA § 305(b) requires states to describe the overall status of water quality statewide and the extent to which water quality provides for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allows recreational activities in and on the water. CWA § 303(d) requires states to submit **a list of waters that do not meet state water quality standards**, plus a priority ranking of listed waters for Total Maximum Daily Loads (TMDL) development based on the severity of pollution and the uses of the waters. On September 20, 2013, the U.S. Environmental Protection Agency (EPA) approved the 2012 State of Hawaii Water Quality Monitoring and Assessment Report, and the 2014 Draft State of Hawaii Water Quality Monitoring and Assessment Report is now available for public review.

- 2) Item h states that CCH shall “identify all organizations, stakeholders, and interested parties that will participate in the study. All Major NPDES Permit holders discharging into the receiving waters shall be asked to participate in the study.” Item i states that CCH shall “Coordinate, organize, and facilitate the implementation of the regional monitoring activities with all Major NPDES Permit holders that are discharging into their receiving waters, EPA, DOH, and other participating government agencies and private entities.” CCH cannot perform these requirements as it does not have the authority to carry out such

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

coordination, and require such participation, at the Federal, State or private sectors levels; DOH is the appropriate agency to carry out these tasks.

- 3) CCH has twice performed regional monitoring under the prior 1998 permit. Equitably, DOH should rotate the regional monitoring program to another permittee as there are other major dischargers to Mamala Bay and not continue to place the time and resource intensive responsibility on CCH alone.

If the regional monitoring requirement remains in this permit, CCH requests the following changes:

- 1) Pages 18-19: Delete sub-items a. through l. CCH will submit a detailed regional monitoring plan to DOH and EPA for approval within two (2) years from the effective date of this permit.
- 2) Page 18, Part D.3, 3rd sentence: Revise the sentence to read, "During its execution, the regional monitoring program will replace CCH's shoreline, nearshore and offshore water quality monitoring programs as described in parts E.1, E2 and E3; and CCH's nearshore and offshore sediment monitoring program described in part E.4 of the permit. Monitoring data obtained for the regional monitoring will not be used to determine compliance with applicable State or Federal water quality standards."
- 3) Page 19, Part D.3.j., after first sentence, add: "The plan must describe the monitoring and analytical responsibilities for all major NPDES permit holders discharging into the receiving waters and for other participating parties."
- 4) Page 19, Part D.3.j., after last sentence, add: "DOH will incorporate the approved regional monitoring plan into the permit within 2.75 years from the effective date of the permit."
- 5) Page 19, item k, last sentence. Revise sentence to read, "Because the actual seasonal variation is unknown, the regional monitoring activities and data collection will be conducted for at least one (1) year until, using the monitoring data, the Permittee has determined the monitoring data has captured the seasonal variation of the regional area (or area that the Permittee is responsible in the event of no participation from other dischargers) but not ending no later than one week prior to the expiration of this permit. If at such time, the Permittee shall revert back to the normal shoreline, nearshore and offshore water quality monitoring programs as described in parts E.1, E2 and E3; and CCH's nearshore and offshore sediment monitoring program described in part E.4 of the permit."

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

- 6) Page 19: Insert a paragraph prior to the last paragraph of that page to state, "The Permittee shall perform only the Permittee's portion of its monitoring and analytical responsibilities as described in the detailed plan for Regional Monitoring, and shall not be responsible for any other portions or aspects of the Regional Monitoring." This is consistent with the intention on page 18 that "Regional monitoring activities are meant to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the region."

The additional language requested above is necessary to avoid the situation that developed under the 1998 permit which required CCH to participate in the regional monitoring of Mamala Bay. Though a coordinating committee consisting of various levels of government and private entities was initially formed, the committee disbanded, and subsequently CCH was in the untenable situation of having to provide, on its own, the finances and resources necessary to comply with the regional monitoring requirements under the 1998 permit.

Response: The language for regional monitoring requirements have been revised. See response to EPA's second comment on page 1 of this document.

50. Page 19, Parts D.3.j., D.3.k., and D.3.l - Use "effective date of this permit" instead of "issuance data of this permit. This language is consistent with the rest of the permit.

Response: These sections were removed from the permit.

51. Page 20-22, Part E. - Provide language stating the format of the monthly monitoring result submittal, either in DMR form, or as attachment of DMR.

Response: This section was clarified to require that the receiving water monitoring results be submitted with DMR as an attachment.

52. Page 20, Part E.1 - Include a new paragraph following the footnote to the second table in Part E.1 with the following language: "Inability to conduct shoreline monitoring due to inclement weather or hazardous conditions which may endanger the lives of the facility's personnel shall not constitute a violation of this permit."

Response: The paragraph was added to this section as requested.

53. Page 20, Part E.1, 2nd table - Revise the monitoring frequency for Enterococci from 7 days per month to 5 days per month at the shoreline stations consistent with the recently issued Kailua Regional and Honouliuli NPDES permits. There is no basis to require 7 days of monitoring per month under the Sand Island WWTP NPDES permit.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Response: This condition is consistent with the previous permit and cannot be reduced due to antibacksliding considerations since there have been discharge and receiving water exceedances.

54. Page 20-21 E.2 - Delete all references to stations R1, R2 and R3 the Nearshore Water Quality Monitoring program in the permit. See Comment #27 for CCH's reason.

Specifically,

- 1) Remove stations R1, R2 and R3 and corresponding GPS coordinates from the 1st table
- 2) Delete "R stations are recreational waters." from the footnote to the 1st table.
- 3) Delete the "R" from the "Monitoring Stations" column in the 2nd table.
- 4) Delete "R – Monitoring Stations R1 through R3" from the footnotes to the 2nd table.

Response: See response to Comment 26.

55. Page 21, Part E.2, 2nd table - Revise the monitoring frequency for Enterococci from 7 days per month to 5 days per month at the nearshore stations in consistent with the recently issued Kailua Regional and Honouliuli NPDES permits. There is no basis to require 7 days of monitoring per month under the Sand Island WWTP NPDES permit.

Response: See response to Comment 53.

56. Pages 20-21, 2nd table, Footnote 3 - Remove bottom depth sampling requirement for enterococcus. The bottom samples at the nearshore (i.e., at the C stations) and offshore stations are below the DOH supported 33 meter depth limit for recreational waters.

Response: HAR, Chapter 11-54 water quality standards has no provisions for depth. The water quality standards must be met through the entire water column.

57. Page 21, Part E.2 - Include a new paragraph following the footnote to the second table in Part E.2 with the following language, "Inability to conduct nearshore monitoring due to inclement weather or hazardous conditions which may endanger the lives of the facility's personnel shall not constitute a violation of this permit."

Response: This language was added as requested.

58. Page 21, Part E.2, footnotes #1 and #2 to 2nd Table - Modify footnote #1 to read "A continuous depth profile (CDP) is a plot of depth versus a water quality parameter. The parameter shall be measured on a CDP basis, from within 1 meter below the surface to within 2 meter above the bottom at 2 meter intervals."

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Modify footnote #2 to read "At each R and C station, grab samples shall be collected at each station at within 1 meter below the surface, mid-depth, and within 2 meters above the bottom."

The reasons for these two changes is that given the wave motion and difficulty in securing the boat in place, it is difficult to perform a grab sample or deploy the CTD equipment to sample exactly one meter from the water surface and two meters from the bottom of the ocean floor..

Response: The footnotes were revised as requested.

59. Page 22, Part E.3, 2nd Table - Under the "Monitoring Frequency" column, change the monitoring frequency from "1/Month" to "1/Quarter" for "Enterococci," "Transparency" and "Visual Observations" in consistent with the recently issued NPDES permits for the Kailua RWWTP and Honouliuli WWTP.

Response: This condition is consistent with the previous permit and cannot be reduced due to antibacksliding considerations since there have been discharge and receiving water exceedances.

60. Page 22, Part E.3, footnotes #1 and #2 to 2nd Table - Modify footnote #1 to read "A continuous depth profile (CDP) is a plot of depth vs. a water quality parameter. Parameter shall be measured on a CDP basis, from within 1 meter below the surface and within 2 meter above the bottom at 2 meter intervals."

Modify footnote #2 to read "Grab samples shall be collected at each station at within 1 meter below the surface, mid-depth, and within 2 meters above the bottom. Results for surface, mid-depth, and bottom shall be reported."

Response: The footnotes were revised as requested.

61. Page 22, Part E.3 - Include a new paragraph following the footnote to the second table in Part E.3 with the following language, "Inability to conduct offshore monitoring due to inclement weather or hazardous conditions which may endanger the lives of the facility's personnel shall not constitute a violation of this permit."

Response: This language was added as requested.

62. Page 23, Part E.4 - Replace station "D3" in table with table "D3A." Monitoring station D3 is directly located above the outfall where there is no sediment for sampling.

Response: Sample location "D3" has been replaced with "D3A" throughout the permit and fact sheet.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

63. Page 23, Part E.4, 2nd paragraph - Remove requirement to conduct sampling in August or September and to conduct annual sampling. A sampling schedule should provide for flexibility so that sampling can be conducted anytime during the calendar year. Requirement for monitoring on an annual basis should be removed as Page 24 provides that sediment chemistry testing is conducted during years one (1) and two (2) of the permit.

Response: This section has been revised to the following:

“Each station shall be monitored during the same quarter each year sampling is required (years one (1) and two (2)) for the parameters indicated in Parts E.4.a and E.4.b of this permit.”

64. Page 23, Part E.4.a, 1st sentence - Delete the sentence “Sediment shall be collected using a 0.16 square meter modified van Veen grab sampler.” City would like to have other options (e.g. hire a deep diver contractor) to obtain ocean bottom sediment samples when the van Veen grab sampler is not available (e.g., requires repair).

Response: This sentence has been revised to the following:

“Sediment shall be collected using a 0.16 square meter modified van Veen grab sampler or other method yielding similar results.”

65. Page 24, Part E.4.a, Table - Correct errors in the table (e.g., “2-methylphenanthrene” should be “1-methylphenanthrene” and “C1-Fluoranthene” should be “C1-Fluoranthenes/Pyrenes”).

“2-methylphenanthrene” should be corrected to “1-methylphenanthrene” in accordance with a Record of Telecommunication dated January 5, 2000 from EPA to CCH noting the error (see attachment A.2). Furthermore, “1-methylphenanthrene” and not “2-methylphenanthrene” is listed under NOAA’s National Status and Trends Program for Marine Environment Quality (see Attachment A.3), a document that is referenced in the current draft permit (i.e., Part E.8). C-1- Fluoranthene should be corrected to C1-Fluoranthenes/Pyrenes which is also listed under the NOAA’s National Status and Trends Program for Marine Environment Quality document.

Response: The revisions were made as requested.

66. Page 24, Part E.5 - Revise the requirement to conduct chemical analyses of fish tissue from fish caught at three offshore stations to conduct such analysis at two offshore stations, the outfall and one control station, either FR3 or FR4.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

CCH's intent of designating two (2) control stations in its permit application is to allow flexibility to monitor one station when the other station is not available.

Response: The requirement remains as written to be consistent with other permits.

67. Page 26, Part E.4.b - Replace the last sentence to the first paragraph with the following text, "Sample handling and preservation procedures should follow those outlined in "Procedures for Handling and Chemical Analysis of Sediment and Water Samples" (EPA/CE-81-1), or as revised."

The method described in the first paragraph is deficient in that it provides a preservation method that is only applicable to the polychaetes group. The benthic infauna includes analysis of other taxon communities (e.g., micro mollusk and crustaceans) that have different preservation methods. The issue is best addressed by referencing the procedural document indicated above.

Response: This section has been revised to include a reference to the specified document.

68. Page 26, Part E.4.b - Revise the 2nd paragraph in Part E.4.b. as follows:
1) Remove the biomass requirement by deleting the words "and biomass" from the second sentence and 2) deleting the third sentence.

The EPA guidance document entitled "Recommended Biological Indices for 301(h) Monitoring Programs" (EPA 430/9-86-002, 1987) is listed in the NPDES permit as a reference document for protocol and methods for sample collection and analysis. Pages 8 and 9 (see Attachment A.4) of the document state that "the inclusion of biomass as a required variable in the 301(h) monitoring program is not recommended for benthos...**because of problems inherent in the collection of biomass data.**" At the bottom of Page 9, the document states that "**Given the foregoing limitations, biomass is not recommended as a primary variable for 301(h) monitoring programs.**"

Page 9 identifies several problems associated with the biomass analysis. For example, that some taxa lose weight when immersed in preservation fluids while others gains weight and that because of the volatility of the alcohol solution in which the specimens are stored, small variations in drying time (to rid specimens of surface fluids) may increase the errors associated with the weight measurements.

Finally, in a letter to CCH, dated May 9, 2000, EPA indicated that the biomass is removed from the current 1998 Sand Island NPDES Permit (see Attachment A.5). EPA's reasons were that the biomass measurements in the waters are not meaningful because micromollusks are the predominantly collected taxa, and the previous permit did not contain a biomass measurement requirement.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Response: This paragraph was revised as requested.

69. Page 26, Part E.5 - Revise requirement to conduct chemical analysis of fish tissue at three offshore stations to two offshore stations, the outfall station and one of the two control stations, i.e., FR3 or FR4. Remove the requirement to restrict sampling to August or September and allow sampling to be conducted at anytime during the calendar year to allow flexibility in scheduling.

Response: The requirement for the three offshore stations remains as written to be consistent with other permits. The requirement to restrict sampling to August and September was revised to the following:

“Each station shall be sampled by hook-and-line or by setting baited lines or traps during the same calendar quarter each year as the nearshore and offshore sediment monitoring.”

70. Page 27, Part E.5, 2nd paragraph, 2nd sentence - Add “Menpachi” to the list of examples of fish that are sedentary and representative of fish caught by recreational and commercial fishermen near the outfall.

Response: Menpachi was added as requested.

71. Page 29, Part E.6.a - Delete the requirement to conduct an Assimilative Capacity and Zone of Mixing Study to identify the minimum and average dilution at the edge of the ZOM and to verify that assimilative capacity exists based on receiving water data at and beyond the edge of the ZOM. The dilution study is unnecessary as CCH has already updated dilution modeling after numerous discussions with PG Environmental, DOH’s permit writer, and submitted an updated Outfall Dilution Analysis in October 2013 that provided these dilution values at the edge of the ZOM (See Comment #5).

An assimilative capacity study is also unnecessary as sufficient receiving water data for ammonia nitrogen existed to conduct an RPA analysis, the Fact Sheet acknowledges this data and concludes that assimilative capacity is available for ammonia nitrogen based on the receiving water data. Also, the geographical scope of the study is overbroad as it extends to “beyond the ZOM” and any study should determine the technical basis for defining assimilative capacity.

Response: It is in the Permittee’s best interest to conduct a broader assimilative capacity study. If it is found by DOH that no assimilative capacity exists for a parameter in the receiving water near the outfall then dilution will not be granted for that parameter in future permits. Also see response to Comment 5.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

72. Page 29, Parts E.6.a.i., E.6.a.ii., and E.6.a.iii, 1st sentences - Revise the schedules for the Assimilative Capacity and Zone of Mixing Study, should those requirements remain in the permit to allow time to consider the appropriateness of incorporating the results of any regional monitoring as follows:
- 1) Submit ZOM Dilution Analysis Study Work Plan to DOH within 2 years of the effective date of this permit.
 - 2) Implement the Work Plan within 2.75 years of the effective date of this permit.
 - 3) Provide an update to DOH of the status of the analysis and provide any available preliminary data and results within 3.5 years of the effective date of this permit.
 - 4) Submit the final report to DOH within 4.5 years of the effective date of this permit.

Response: The requirements shall remain as written, however, interim dates may be revised when the permit is reopened due to regional monitoring requirements. The final report due date must remain the same to facilitate the next permit renewal.

73. Page 30, Part E.7.b - Add to the end of the paragraph, the following text, "This ocean bottom information shall be recorded at least once per calendar year at the permit designated stations."

Response: This language was added as requested.

74. Page 33, Part G.1. - Use "effective date of this permit" instead of "issuance date of this permit. This language is consistent with the rest of the permit.

Response: This sentence was revised as requested.

75. Page 46, Part I.1 "Effluent and Receiving Water Monitoring Programs" appears to be a more appropriate title to Part I.1 than in the "Schedule of Submission" section.

Response: This title shall remain as written to be consistent with other permits.

76. Page 49, Part I, Item 2.f(1). - In the table, change the submission deadline for the Pretreatment Annual Report from February 28th of each year to March 31 of each year to be consistent with the recently issued NPDES permits for the Kailua and Honouliuli WWTPs.

Response: The deadline was changed as requested.

77. Page 46, Part I.1.a(2) - Delete the word "approved" in the 1st paragraph.

The permit language in this section does not require the approval of the Effluent and Receiving Water Monitoring Programs.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Response: This sentence was revised as requested.

78. Page 49, Part I.2.f.(1) - Delete the redundant reporting requirement for DMR submittals by revising the first sentence immediately following the Table in Part I.2.f.(1) specifying the schedule of submission of reports as follows, "Signed copies of monitoring and all other reports required by this permit except those in Part I.2.e of this permit, shall be submitted to the Director through the CWB Compliance Submittal Form for Individual NPDES Permits and NGPCs."

Part I.2.e of the permit requires the submittal of DMRs using NetDMR while Part I.2.f.(1) requires the submittal of monitoring results as well as all other permit required reports through the CWB Compliance Submittal Form through the e-Permitting Portal website.

Monitoring results, such as DMRs, should be submitted electronically using only one website, the NetDMR website. CCH believes that DOH did not intend to require duplicate electronic submittals of the DMRs as evidenced by the language in the DOH issued Kailua Regional WWTP NPDES permit, (issuance date of February 14, 2014).

Response: The reference to Part I.2.f.(2) was changed to Part I.2.e. The language in Part I.2.e says that "[o]nce a Permittee begins submitting DMRs using NetDMR, it will no longer be required to submit hard copies of DMRs to the Director, unless otherwise requested by the Director. This means that once monitoring results are submitted through NetDMR, they no longer need to be submitted through e-Permitting.

79. Page 49, Part I.2.f.(1) - Delete the requirement for submittal of a semi-annual SIU Compliance Status Report.

Change the due date for the Pretreatment Annual Report (PAAR) to March 31 of each year.

The submittal requirement for an SIU Semi-Annual Compliance Status Report in the Table of Reports in Part I.2.f.(1) is not consistent with the requirement of the body of the permit which requires that SIU compliance status be included in the annual report of pretreatment activities. CCH recommends that the compliance status of SIUs be included in the Annual Pretreatment Report as set forth in Part G.6.d. page 36.

Requirement to submit PAAR on Feb 28 of each year should be revised to March 31 to be consistent with other permits. CCH has been historically submitting a single PAAR covering all plants. Additionally, CCH has also received concurrence from DOH (Mike Tsuji) continuing this reporting practice since the CCH's pretreatment program is implemented island wide.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Response: The due date for the Pretreatment Annual Report was changed as requested. However, the requirement for the SIU Semi-Annual Compliance Status Report remains as written to be consistent with the Kailua Regional and Honouliuli Wastewater Treatment Plant permits.

80. Page 50, Part I, Item 2.f(2) - Insert a row below the "Shoreline" row for "Nearshore Water Quality Monitoring" with applicable requirements for the "Reporting Period" and "Report Due Date" columns.

Response: The table was revised as requested.

81. Page 50, Part I.2.f(2) - Change the submittal due date for the shoreline water quality report data from the 15th day of the following month to 28th day of the following month to be consistent with DMR submittal due date.

Response: The item was revised as requested.

82. Page 51, Part I, Item 3.c.(3) - Add email to DOH, CWB as an acceptable means to submit a written non-compliance report.

Response: Email is not an acceptable reporting method for written non-compliance reports. Reports must be properly certified as required in Part I.2.a.

83. Page 52, Part I, Item 5. - Delete the Requirement to Report Planned Changes. CFR 122.41 specifies certain standard or boiler plate conditions that must be incorporated into all NPDES permits either expressly or by reference. For conditions applicable to State programs see CFR 123.25. CFR 122.41(l)(1) conditions for reporting planned changes are not appropriately incorporated into the permit.

Hawaii has developed an attachment for NPDES permit that includes the relevant federal standard conditions so there is no need to incorporate language expressly into the permits.

The proposed permit language goes beyond the Reporting requirements for Planned Changes specified in 122.41(l)(1) which states that notice is required **only** when:

- (i) the alteration or addition to a permitted facility may meet the criteria for determining whether the facility is a new source under 122.29(b);
- (ii) the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged; or
- (iii) the alteration or addition results in a significant change in the Permittee's sludge use or disposal practices.

There is no basis for the Director to be informed of any other planned physical

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

alternations or additions.

Response: This requirement shall remain to be consistent with other permits.

84. Appendix 1 - Correct Appendix 1 by adding Methylene Chloride to the list under the Volatiles Organics group. Replace "hloroform" as a listed "Discharge Parameter" with "Chloroform."

Methylene Chloride is not listed in the table in Appendix 1 of the permit. If the "Remaining Pollutants" under the table in Part A.1 are those Priority Pollutants listed in Appendix A to 40 CFR Part 423, then Appendix 1 in the permit should be corrected as indicated above. "hloroform" is a typographical error.

Response: Appendix 1 was revised as requested.

85. Include language that the latest applicable regulations, approved methodologies, etc. will supersede any outdated regulations, approved methodologies, etc. that are specified in this permit.

Response: The language in this section remains as written. Permit requirements must be based on regulations that are in effect to ensure that the general public has an opportunity to comment on permit conditions.

Comments Received From Mr. James S. Kumagai

I am responding as a concerned citizen and taxpayer to your notice of August 20, 2014 on the matter of the draft NPDES Permit for the Sand Island Wastewater Treatment Plant. I am neither affiliated with the permittee in any way or form nor with any of the enforcing agencies. I am concerned with the outcome of the permit decisions as a private citizen who cares about the quality of our environment and one who must pay for, and bear the consequences of, any action or inaction on this matter.

I am familiar with the environment issues and their history to the extent of my experience: (1) as a registered professional engineer in the State of Hawaii (PE-2977C) practicing in environmental engineering, (2) my academic background (BS 1962 University of Hawaii, MS 1965 Washington University St. Louis, PhD 1969 University of California Berkeley), (3) my specific work experience relevant to the present issues: (a) as the lead engineer for Sunn Low Tom and Hara Inc. as part of the team that developed the Water Quality Program for Oahu, 1969–1972, (b) as a NAUI certified (1971) SCUBA diver who actually observed first hand, the real world underwater end-of-pipe conditions at all of the ocean outfall disposal sites existing at that time, (c) as Deputy Director of Environmental Health at the DOH, 1975 to 1980, (4) as representative of the Hawaii Water Pollution Control Association appearing before the

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

US Senate Subcommittee on Environmental Pollution (Senator Muskie, Chairman) of the Committee on Public Works, Ninety-Third Congress, March 18, 1974, to present testimony and support for amending the Federal Water Pollution Control Act Amendments of 1972 which later passed into law as Section 301H to the CWA, and finally as a practicing environmental engineer for more than 45 years.

There are several effluent limits proposed that are especially objectionable for the following reasons. No common sense. They ignore science, real world experience, and public interest. The result will serve no useful purpose; worse yet, they will be detrimental instead to the environment and to the citizens who must pay for nothing.

It is recognized that the draft permit is an instrument of regulatory action and must be done under statutory authority. However, it should be acknowledged that this authority is obligated first and foremost to serve the public interest. Regulations are a means to an end, and that end is environmental quality control holistically involving the land, air, water, and people. It is in this spirit that comments and recommendations are offered for consideration.

The objectionable effluent limits are the following:

- A. Nutrients: ammonia.
- B. Chlordane, Dieldrin, DDT.
- C. Enterococci

AMMONIA LIMIT: THERE IS NO FREE LUNCH.

Nutrient (ammonia) limit proposed in the draft permit will do nothing to enhance water quality in Mamala Bay. Instead, it will do more harm than good.

Ammonia is not a real environmental problem in the deep ocean discharge in Mamala Bay, but it can be made to become a problem artificially, or bureaucratically, as it appears to be the case here. For one thing, there is no real-world impairment of beneficial uses of the local, open coastal waters from ammonia or any of the nutrients. There is no scientific basis for imposing effluent limits for ammonia nitrogen here in the deep ocean in the open coast.

Instead, it is a self-inflicted environmental problem as an artifact of the regulatory system. Imposing the effluent limits will only incur an added expense to solve this non-issue. Imposing more technology, means more fossil-fuel derived energy consumption, more green-house gas emission, and hence climate change and global warming. The net effect is zero benefit and negative impact on our environment all at the taxpayers' expense.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Fundamentally, nitrogen and other nutrients are essential for primary productivity in the coastal waters. For embayments as in Kaneohe Bay and Pearl Harbor, the problem was eutrophication. Kaneohe, for example, had an added problem of coral toxicity. In the open coast regime, the ecosystem functions efficiently within the available limits of space, time, and energy. Primary productivity involves photosynthesis where sunlight is amply available for energy to drive the process. In a situation of limited sunlight in the deep ocean system at Sand Island there is no photosynthesis, hence no eutrophication. Otherwise, photosynthesis utilizes carbon dioxide for synthesis and gives off free oxygen. Carbon dioxide now is receiving considerable attention nationally and internationally as a greenhouse gas leading to adverse climate change. Carbon dioxide uptake by primary producers is highly desirable for this purpose. Granted, the extent of primary productivity from nutrients from the discharges on Oahu may be relatively small in the global context, but in principle, it gives a net positive environmental outcome. Every little bit counts. In principle, if we all did a little; we can do a lot. Nutrients in our open coastal waters in general will be good by promoting primary production with attendant reduction in greenhouse gas emissions consistent with national and international policy. It is unlikely that problems of eutrophication would ever occur in the open coast regime for Oahu as it could in an embayment. The land mass is not big enough.

On the contrary, imposing effluent limits for ammonia nitrogen, or for nutrients in general, will diminish the positive environmental effects of primary productivity on green house gas emissions. Worse yet, we will be actually building a greenhouse gas manufacturing plant in the process of applying unnecessary technology for treatment. There is no free lunch in ecology.

By comparison, it will cost us nothing to remove the ammonia effluent limit from further consideration.

Recommendation:

1. Remove the proposed ammonia effluent limits (and for that matter, all other nutrient limits).
2. Nature knows best to deal with issue.
3. Apply technology for effluent limits only as a net environmental gain, considering green house gas emissions and global warming in the process equation.

Response: DOH is obligated to implement applicable water quality standards in NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. Further, as previously discussed in this response to comments, the effluent limitation for ammonia nitrogen is based on estimated current treatment performance, and costly facility upgrades are not expected to be necessary for the Permittee to comply. Applicable effluent limitations for ammonia nitrogen and nitrate + nitrite have been included in the proposed permit based on the requirements and HAR 11-54 and 11-55.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

CHLORDANE, DIELDRIN, and DDT

Chlordane, dieldrin and DDT are banned from use. Their residues in the environment come from past usage and they will most likely persist in the environment for centuries to come.

Like the rest of the persistent synthetic organic chemicals, they will eventually permeate the earth's ecosphere following the second law of thermodynamics (entropy). DDT is an example that has been documented on a global basis. Chlordane, dieldrin, and DDT has been documented in our waterways and estuaries, and even in our drinking water supply. The pathways and transport kinetics are often unclear but the end result is certain. They are already present in our estuaries and streams where the fish and aquatic nurseries are. That is more of a public health threat and environmental concern than the effluent discharges under present consideration. Sadly, hardly any regulatory attention is being given to it. WQPO Work Area 3 report (1971) raised the red-flag decades ago by documenting their existence in the Pearl Harbor estuary from tributary streams.

It is likely that groundwater infiltration into the sewer is a source of chlordane, dieldrin and DDT concentrations. As such, they represent but a leakage from a larger pool of the chlorinated hydrocarbons that is the major contributor of contaminants into our coastal environment. They will naturally permeate the nearshore coastal waters and eventually the offshore waters. Ultimately, chlordane, dieldrin and DDT will reach equilibrium in concentration uniformly over space according to the second law of thermodynamics. It may degrade in time in the distant future well beyond the half life of the compounds.

Given the observed mass emissions rates of chlordane, dieldrin and DDT in sewage, that leakage is small and insignificant by comparison to the pool based on their mass applied on land over the years. Placing effluent limits on them would only incur cost in an attempting to remove a drop-in-the-bucket and transferring it somewhere else in the environment where it might do still more harm. It must go somewhere. Effluent limits are just a short-sighted, head-in-the-sand approach that will solve nothing in the end but add a cost burden on the taxpayers.

It is more important to assure through monitoring that no new sources of contamination are contributing and that there are no "hotspots" in the environment that require local remedial action to safeguard public health.

Then rely on evidence-based analysis from measurements of these contaminants in the environment and in the food chain to determine what actions would be relevant and where to intercede in the ecosystem for remedy. Relying on technology at this point as effluent limits serves no useful purpose and is likely to be a waste of time and tax dollars.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Recommendation:

1. Remove the effluent limits for chlordane, dieldrin and DDT but leave the monitoring and reporting requirements in place.
2. Analyze and evaluate the issue through evidence and science to determine the truth of this matter and direct attention for remediation holistically.
3. Apply technology for effluent limits only as a net environmental gain, considering green house gas emissions and global warming in the process equation.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. HAR 11-54, 11-55, the STCP, or applicable federal regulations do not provide an exception for legacy pollutants within the Permittee's effluent.

ENTEROCOCCUS.

It is apparently the preferred indicator bacteria for the presumed presence of pathogens from fecal contamination in water quality management and regulation for public health protection. Enterococcus is the presumptive evidence for the presence of pathogens. It is not deterministic but operational. It has been used routinely over decades in many places in this country and around the world to help answer the question: is the water safe for swimming." Sometimes it worked. Other times, it did not.

It is proposed as a limit in this permit. Will it work? Depends. Why am I saying this? Three reasons.

First, our experience. Water quality program for Oahu (WQPO 1972) recommended taking the all the nearshore and inland point discharges and move them away completely from the nearshore ecosystems and recreational beaches and put them in the deep ocean regime where it will do the least harm to the environment and public health. Everything has to go somewhere. Nature knows best where and how. By some decree, that has become a problem.

Second, EPA recommended new recreational water quality criteria to better protect public health.

(<http://water.epa.gov/scitech/swguidance/standards/criteria/healthrecreation/index.cfm>).

Now science, or truth, matters. The 2012 Recreational Water Quality Criteria brought forth the latest research and science showing the link between illness and fecal contamination. It is a science-based criteria document spelling out the way to systematically and objectively develop a program that is scientifically defensible. The criteria include the parameters of geometric means and statistical threshold values altogether and fundamentally focusing on the parameters of magnitude, duration, and frequency. The criteria are based on the epidemiological studies of the past and the

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

data and information from the National Epidemiological and Environmental Assessment of Recreational Water (NEEAR). Now it makes more sense than regulatory edicts.

The new EPA criteria are relevant and scientifically defensible. The proposed condition for enterococcus here is not.

Third, use common sense. The proposed permit limit for enterococcus is a regulatory expediency. It will cost money to comply for UV disinfection. Energy consumption will increase green house gas emissions and global warming. It will solve nothing to protect public health that is not already inherent in the de facto action of WQPO. It makes more sense to reevaluate the situation with the new criteria and amend the existing WQS than to spend money to comply with the proposed permit limit and create a global warming issue while solving nothing in real public health protection. Technology has a place only for achieving a net environmental gain.

Recommendation:

1. Eliminate the limit for enterococcus.
2. Reevaluate the issue with the new 2012 Recreational Water Quality Criteria.
3. Take appropriate action for public health protection, holistically.
4. Apply technology only if it leads to a net positive environmental gain, considering green house gas emissions and global warming.

Response: DOH is obligated to implement applicable water quality standards in NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. The Permittee is not obligated to use UV as a method of disinfection. This permit and the facility's previous 301(h) waiver allows for the Permittee to select the technology.

WHERE DO WE GO FROM HERE? BACK TO THE FUTURE

The federal initiative is to upgrade standards and press for ever more stringency in permit conditions. The intention is well meant, but it appears to be creating an ever more complex system to regulate and administer. The danger is getting mired in attempts to sort out the complexities of the means while ignoring the ends.

Historically, after the passage of NEPA in 1969, the environmental laws for air, water, drinking water, hazardous materials, toxic substances, etc. were passed in rapid succession piecemeal by Congress at different times, by different committees, following different environmental criteria, while all professing to be for the good of public health and the environment. The result is a fragmented set of environmental programs, although each being well intentioned.

Imposing the effluent limits is a case in point. It appears short sighted and operating in a silo. At the very outset of the environmental ground-swell in the 1960s, many argued

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

for a holistic approach. Barry Commoner's laws of ecology is a classic result. The creation of a single federal agency to bring all the programs under one roof was once thought to be a way to overcome the effects of fragmentation in the environmental programs. The idea of the unity of nature was also brought out in the announcement of the then President Nixon when the US EPA was formed in 1970. The President said..."Despite its complexity, for pollution control purposes the environment must be perceived as a single related system." He went on to announce, "A far more effective approach to pollution control would identify pollutants; trace them through the entire ecological chain, observing and recording changes in form as they occur; determine interactions among forms of pollution; (and) identify where on the ecological chain interdiction would be most appropriate." (Ruckelshaus, 1985)

Instead, things got even more complex as time went on. We now have a mixed bag of issues involving science and the law. It appears we have lost sight of our real environmental goals and objectives. The idea of coordination through a single agency at the federal level has not been happening. Instead, Ruckelshaus (1985), the first Administrator of the newly formed US EPA under President Nixon, in hindsight, recommended taking Rene Dubos' suggestion to heart in resolving the environmental complexity by:

"Thinking globally, acting locally."

Case in point: Nutrient limits. We cannot apply Continental USA solutions to environmental problems to Hawaii. We must act locally to deal with our own issues. Another case in point: secondary treatment for our deep ocean outfall discharges. The corollary is to say one-size-fits-all approach does not work for the environmental issues remaining for our future. Maybe at one time it did, but not anymore. Centralized administration of programs obviously does not, and cannot, respond to the reality of this world of diverse ecosystems and cultures. The only way to deal with the real world is to think globally but acting locally. The goals and objectives of the federal and state legislation for environmental quality are not compromised at all by doing so. It is time that we go back to advocacy of the early initiators of the country's environmental movement. That is, going back to the future.

Recommendation:

1. Do it.
2. Keep it simple and relevant.
3. Think globally, act locally.
4. Revise the effluent limits and regulatory procedures to serve our own local needs for our own island ecosystem and culture.

Response: DOH is obligated to implement applicable water quality standards in NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. Further

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

response to the commenter's opinion on environment solutions and current regulations are outside the scope of this response to comments.

Comments received from Mr. Roy K. Abe, P.E.

My name is Roy Abe and I am a licensed civil engineer in Hawaii with approximately 33 years of consulting experience in the wastewater treatment and water quality field. I would like to take this opportunity to comment on the draft Sand Island Wastewater Treatment Plant (SIWWTP) NPDES permit as a concerned private citizen and taxpayer.

I am employed by the Honolulu office of HDR Engineering, Inc. My educational background includes a B.S. degree in civil engineering from the University of Hawaii, and a M.S. degree in civil and environmental engineering from the University of California at Berkeley. My area of expertise is sanitary engineering, and I have had to the opportunity to work on the planning and design of many wastewater treatment plants. I have provided engineering services for City and County of Honolulu (CCH), including an initial review of the pre-draft permit for the SIWWTP and evaluation of UV and other process units at the plant. I am not presently involved in review of the current draft permit for CCH. The comments provided herein are my own.

While I am somewhat familiar with the SIWWTP and the outfall to which it discharges, my intent is not to comment on the detailed calculations used to derive the proposed effluent limits. My comments are primarily intended to provide some insight on some of the scientific and "common sense" factors that should be considered. Hopefully this will provide justification for relaxing or eliminating some of the proposed limits that would otherwise cause considerable financial hardship and adverse environmental impacts with no significant water quality or health benefits.

My comments are as follows:

1. Chlordane and Dieldrin (Page 3, Par. A.1) – The proposed effluent limits of 0.05 µg/L (annual average) and 0.38 µg/L (maximum daily) for Chlordane and 0.0074 µg/L (annual average) and 0.18 µg/L (maximum daily) for Dieldrin should be eliminated. The use of Chlordane and Dieldrin are legacy pesticides that were widely used to treat for ground termites. The use of Chlordane and Dieldrin has been banned in the U.S. by EPA for more than 25 years. Chlordane and Dieldrin are carcinogens and the lower limits in the Water Quality Standards (WQS) are based on possible carcinogenic effects from human consumption of fish containing the pesticide due to bioaccumulation in the food chain.

The Chlordane and Dieldrin found in the effluent are likely due to the pesticide leaching into the sewer system via groundwater infiltration. Past sampling of urban streams has shown highest levels of contamination when all the stream flow was

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

from groundwater discharge. Chlordane and Dieldrin contaminated groundwater infiltrating via sewer pipe defects are likely to be the primary sources of these chemicals. Since the chemicals are relatively insoluble and bind readily to soil particles, contaminated soil infiltrating through defects in service lateral lines located in pesticide treated soil may be an added source of Chlordane and Dieldrin during heavy rainfall. Cast iron and clay pipe lateral sewers servicing older homes in areas which experience high rainfall, corrosive soils, root intrusion, and ground settlement often exhibit holes, separated joints, and other structural defects.

Removal of Chlordane and Dieldrin through conventional treatment processes is difficult and likely to be ineffective. Specialized treatment processes would be very costly and are likely to have no direct public health benefits. The pesticides removed from the treatment of wastewater could potentially be transferred to the biosolids that are processed into fertilizer and soil amendment products.

Rehabilitation of sewer lines to reduce infiltration and minimize entry of Chlordane and Dieldrin to the sewer system would be a more logical corrective action than implementing treatment to remove the pesticide from the wastewater. A substantial portion of the contaminated infiltration can potentially be removed from the collection system. This would likely be a challenging task, however, since much of the pesticides may be from inflow and infiltration occurring within private property through defective house laterals.

There is no evidence that Chlordane and Dieldrin bioaccumulates in the marine life at or near the outfall. It is highly unlikely that substantial bioaccumulation is occurring in the marine life at the outfall due to strong and varying currents that dilute and transport the trace amounts of the chemicals. Unlike river discharges, which consistently flow in the same general direction, currents in the open ocean constantly change directions in a largely unconfined environment. If bioaccumulation did occur in certain fishes congregating near the outfall, it is unlikely that sufficient amounts of these fishes would be caught and consumed to have a noticeable carcinogenic effect. Based on the depth and distance of the outfall from shoreline, a significant amount of fish affected by the outfall would be not caught for human consumption. My understanding is that there is no conclusive evidence of bioaccumulation of pesticides from the SIWWTP discharge based on examination of fishes near the outfall by the CCH's monitoring program.

In the unlikely event that affected fishes were proven to be a health concern, a more cost effective mitigative measure would be to simply discourage fishing near the outfall. Simply delineating the limits of the ZOM with buoys to indicate the location of the outfall would likely discourage fishing in the area. Knowledge of the outfall location would probably be appreciated by the public.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Since Chlordane and Dieldrin may be present in groundwater that discharges to streams and nearshore waters, bioaccumulation in fishes caught in nearshore waters with limited circulation, such as bays and coastal Hawaiian fishponds, would appear to pose a greater health concern. In past studies (see <http://www.epa.gov/region9/water/npdes/pdf/sand-island/SI-appl-appxD-chlordane-dieldrin.pdf>) for the Sand Island WWTP basin, the chemicals were found in urban streams at higher levels than the wastewater collection system. The highest level of Dieldrin measured in streams was about twice the highest level found in the wastewater collection system. The studies also indicated that the maximum level of Chlordane found in stream sediments was 600 times the maximum level found in ocean sediments. The researchers suspected that the Chlordane found in the sediments within the Sand Island zone of missing may have been caused by Chlordane bound to grit and sludge discharged through the outfall between 1976 and 1979 prior to completion of the Sand Island solids handling facilities.

It might be argued that the dispersal of trace amounts of Chlordane and Dieldrin far offshore via sewer infiltration and the outfall could potentially be a benefit by reducing discharge of the carcinogens through stream and groundwater discharges to nearshore waters where bioaccumulation is much more likely to occur.

Similar arguments presented above for Chlordane and Dieldrin would be expected to be applicable to DDT.

Response: DOH is obligated to implement applicable water quality standards in NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. HAR 11-54, 11-55, the STCP, or applicable federal regulations do not provide an exception for legacy pollutants within the Permittee's effluent.

2. Enterococci (Page 3, Par. A.1; Page 5, Par. A.6) – The proposed effluent enterococci limits of 3,605 CFU/100 mL (average monthly) and 18,000 CFU/100 mL (maximum daily) should be eliminated, or at least reassessed based on a more detailed analysis of the receiving water monitoring data. The proposed interim effluent enterococci limits of 16,431 CFU/100mL (monthly geometric mean) should be similarly eliminated or reassessed. A detailed reassessment of the data, particularly monitoring data for the receiving water, may show that lower levels of disinfection, or possibly elimination of disinfection, may be justified.

The proposed enterococci limits, which will likely require costly replacement or upgrade of the ultraviolet (UV) disinfection system, should be supported by presenting data showing that water quality violations are occurring and that the violations can be attributed to the discharge. Monitoring data presented in the Fact Sheet beginning on page 41 indicate that the geometric mean values for the

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

monitoring stations are well below the 35 CFU/100 mL limit of the WQS, and that the values for the offshore stations near the outfall are lower than the shoreline stations.

Expenditure of funds for new or upgraded effluent disinfection facilities would provide little measurable benefit and waste funds that could be used for more effective public health protection actions such as non-point source pollution control. Requiring CCH to meet the stringent monthly geometric mean limit of 16,431 CFU/100 mL by June 30, 2024 would result in a significant waste of pollution control funds. Upgraded secondary treatment facilities are required by 2035, at which time a lower cost, more efficient and less power intensive UV system could be installed.

It should be noted that both enterococci concentrations and outfall dilution factors can vary considerably. The assumption that the maximum enterococci concentration and minimum dilution occurs at the same time is overly conservative. Furthermore, there may be enterococci die-off occurring during transmission of the flow from the SIWWTP to the zone just outside the outfall diffuser ports. Exposure of the enterococci in the effluent to rapid changes in osmotic pressure from differences in salinity of the SIWWTP effluent and saline seawater would tend to promote additional enterococci die-off. It would appear that additional monitoring and statistical analysis of the data to support the proposed enterococci limits is justified.

The need for effluent disinfection and the basis of the 18,000 CFU/100 mL maximum daily limit should be reevaluated. Most water quality professionals in Hawaii clearly recall and understood that CCH agreed to install disinfection facilities at the SIWWTP to gain the support of EPA and environmental groups for the renewal of the 301(h) waiver and avoid costly secondary treatment. The need for disinfection and the enterococci limit, as well as the cost, power consumption and technical challenges of disinfecting the primary effluent with UV disinfection, were unfortunately not fully vetted or known at the time. Local marine and water quality experts had pointed out significant deficiencies and discrepancies in the Mamala Bay Study conducted in the 1990's, which served as the primary justification for the SIWWTP disinfection facilities.

At the time that CCH originally made the decision to install the UV system, global warming and the adverse impacts of carbon dioxide and other greenhouse gas emissions were not significant issues. Based on the exorbitant power consumption of Sand Island's UV system, reassessment of the need for and level of UV disinfection should be supported rather than opposed by EPA and environmental groups. It would not be logical to fund costly for disinfection facilities that may have limited public health benefits and would clearly contribute to global warming.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

The SIWWTP UV disinfection system is a heavy financial burden as both capital and annual operating costs are significant. Funds could clearly be used for more effective environmental and public health protection and enhancement projects.

Response: DOH is obligated to implement applicable water quality standards within NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. The discharge consists of treated sewage which may contain pathogens at elevated concentrations if not properly disinfected, sufficient to impact human health or the beneficial uses of the receiving water. Consistent with 3.3 of EPA's TSD, the regulatory authority should consider additional information discussed under Section 3.2 (i.e., type of industry, type of POTW, type of receiving water and designated uses, etc.) when evaluating reasonable potential. Reasonable potential can be determined without effluent or receiving water exceedances of applicable water quality criteria. Because the facility is a POTW, and pathogens are characteristic of treated municipal wastewater, and the beneficial uses of the receiving water include recreation where human contact may occur, reasonable potential for enterococcus has been determined. To ensure the protection of human health, this permit establishes effluent limitations for enterococcus.

HAR, Section 11-54-8(b) establishes water quality objectives for marine recreational waters within 300 meters (1,000 feet) of shore. As discussed in Part E.3.a of the Fact Sheet, the proposed permit establishes receiving water limitations for marine recreational waters within 300 meters (1,000 feet) from shore based on State regulations contained in HAR, Chapter 11-54. Federal regulations at 40 CFR 131.41(c)(2) establish water quality standards for bacteria in marine waters beyond 300 meters from shore, based on CWA Section 304(a). 40 CFR 122.44(d)(1)(vi)(B) states that where a State has not established a water quality criterion for a specific pollutant with reasonable potential, the permitting authority must establish effluent limitations on a case-by-case basis, using EPA's water quality criteria published under Section 304(a) of the CWA. Since Outfall Serial No. 001 is beyond 300 meters (1,000 feet) off shore, there is no applicable State water quality objective for the discharge, and EPA's criteria for enterococcus specified in 40 CFR 131.41 is applicable.

As described in the fact sheet, the use of a minimum initial dilution of 103:1 was used to calculate the proposed effluent limitations for enterococcus. Although human contact with the receiving water may be infrequent, human contact within the zone of mixing may occur, thus for the protection of human health due to the potential for acute illness from pathogens the initial dilution was determined to be appropriate. The use of the initial dilution is intended to be protective of water quality standards, beneficial uses, and human health. Human health may be impacted from short term exposure to elevated concentrations of pathogens, thus the provided dilution must be conservative to account for all reasonable discharge scenarios. Further, the initial

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

dilution used to calculate the proposed effluent limitation currently represents the only known dilution for the outfall.

The interim limits were established as part of a schedule of compliance because the City cannot immediately meet the enterococcus limitations. The interim limits are based on SIWWTP's current performance and are effective until the deadline for SIWWTP to meet secondary treatment standards.

Currently, the "simple ban of recreational activities in the vicinity of the outfall" is not a viable option, and results in an immediate impact on the beneficial uses of the receiving water, which include recreation.

3. Concluding Statements – There are significant consequences of imposing excessively stringent effluent limits without strong justification and comprehensive analyses of pollutant sources, water quality data, and "real life" ecosystem impacts. Unjustified effluent limits that have adverse cost and environmental consequences will likely lead to an appeal and potential litigation that will further consume limited manpower and financial resources of the stakeholders. It would be in the best interest of the stakeholders and the environment to eliminate or revise the proposed effluent limits for reasons discussed above during this permit cycle.

I would urge the permit writers to keep an open mind, and take a scientific and common sense approach to developing effluent limits for the SIWWTP and other treatment plants throughout the state. Please allow our utility agencies to direct limited financial resources to pollution and public health enhancement projects that will result in measurable benefits.

Response: Comment acknowledged.

Comments received from Mr. Michael Chang of Hawaii Energy

On behalf of Hawaii Energy, the ratepayer-funded energy conservation and efficiency program for Honolulu, Hawaii and Maui counties under the direction of the Hawaii Public Utilities Commission as third-party administered by Leidos Engineering, LLC, I, Michael Chang, Chief Innovations Architect & Technology Director, respectfully provide the following comments and questions of clarification for consideration and action by the State of Hawaii Department of Health (DOH) regarding the proposed City and County of Honolulu Sand Island Wastewater Treatment Plant National Pollutant Discharge Elimination System (NPDES) discharge permit.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

Background and Interest in Permit

Hawaii Energy is responsible for identifying and assisting in the implementation of actions to help meet the State of Hawaii's mandated Energy Efficiency Portfolio Standard (EEPS) of a 4,300 GigaWatt-hour (GWh) reduction of electrical energy consumption by 2030. The energy consumption of current and future wastewater treatment facilities required to meet NPDES permits issued by the DOH is of significant impact to the energy consumption in the State. Our interest in commenting on this Permit is to raise questions and provide comments to better understand the energy consumption impacts driven by the requirements outlined in this proposed permit. In addition, Hawaii Energy takes this opportunity to outline some potential factors that the DOH may wish to consider with the goal of helping the State of Hawaii meet its EEPS targets.

Comments

1. Assistance to Lower Electrical and Fossil Fuel Energy Consumption Impacts – Hawaii Energy has been working with the City and County of Honolulu Department of Environmental Services (ENV) to review their operations to identify and implement energy reduction opportunities in their facilities that includes collection system pumping, treatment operations and facilities operations.

Hawaii Energy has also been in discussions with the DOH and ENV to provide financial and technical assistance for any work required to reduce electrical energy, fossil fuel consumption and air emissions. This includes reviewing or modifying the requirements in the NPDES permit to determine if there are modern measurement technologies that allow flexible requirements and/or implementing equipment to operate with improved energy efficiency without sacrificing public health and safety.

Response: The NPDES permit generally does not require the Permittee to implement prescribed technologies. Rather, the Permittee is required to ensure that the facility meets effluent discharge limitations. The Permittee has the ability to select the best technology for their facility to achieve the requirements in the permit.

2. UV Disinfection System Focus of Efforts – In regards to this proposed permit for Sand Island, Hawaii Energy's focus is on the potential energy and environmental impacts of the UV Disinfection system. A joint review between ENV and Hawaii Energy of the current UV Disinfection System has determined that its operation consumes more than 23,000,000 kWh per year. This equates to the following:
 - a. 14.6% of the entire C&C of Honolulu's Electrical consumption
 - b. 31.0% of the entire ENV operations electrical energy consumption
 - c. 61.4% of the entire Sand Island Waste Water Treatment Plant consumption

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

In turn, the fuel consumed contributes to air pollution discharges that are estimated in the table below based on EPA calculators as

UV Project Impact on Energy Consumption and Cost						
<i>Existing</i>	<i>kWh/Year</i>	<i>% Oahu</i>	<i>% C&C</i>	<i>% ENV</i>	<i>% SI</i>	<i>\$/Year (Aprox.)</i>
Total Oahu 2012	6,975,996,000	Base				
C&C Total of All Facilities FY13	159,041,937	2.3%	Base			\$ 53,900,000
ENV Oahu Wide FY13	74,952,693	1.1%	47.1%	Base		\$ 24,300,000
Sand Island Total (with UV) 2013	37,831,596	0.5%	23.8%	50.5%	Base	\$ 11,100,000
Sand Island UV System only 2013	23,210,400	0.3%	14.6%	31.0%	61.4%	\$ 6,900,000

Emission Equivalencies on Oahu (Gathered from EPA Power Profiler Resources*)

Energy in kWh	23,210,400	kWh/year
Energy in MWh	23,210	MWh/year
CO2 - Carbon Dioxide	40,421,229	lbs/year
CH4 - Methane	2,475	lbs/year
N2O - Nitrous Oxide	559	lbs/year
Nitrogen Oxides	69,631	lbs/year
Sulfur Dioxide	92,842	lbs/year
Less Cars	3,853	Passenger Cars
Less miles driven	43,658,762	Miles per Year by average Passenger Car
CFLs Installed	480,455	Incandescent lamps switched to CFLs
Less oil	41,779	Barrels of Oil consumed
Like adding Forest Space	15,040	Acres of US forest CO2 sequestered in one year

* Power Profiler - HICC - Oahu - Excel tool and Website

http://oaspub.epa.gov/powpro/ept_pack.charts

<http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html>

Hawaii Energy - Project Fossil Fuel Reduction Comparison to PV and SWH

Rooftop Solar Panels	63,000	Panels to offset same energy usage
Solar Water Heaters	11,200	Solar Water Heating Systems to offset same energy usage

Response: The NPDES permit requires that the facility disinfect its effluent, however, the disinfection method is not specified. The permit allows the Permittee to comply with the enterococcus limitations by 2024, which provides 10 years for the Permittee to reevaluate its current disinfection facilities and potentially opt for a more energy-efficient technology to comply with the permit requirements.

Potential Factors for Consideration

1. History and Permit Impact on UV Disinfection System – We understand that there was a provision in the existing permit that required installation and one year of operation to test the UV Disinfection system at the Sand Island Wastewater Treatment Facility. The operation of the UV system was originally intended to reduce effluent impacts on the public in the event of an accidental discharge. The test was to conclude at the close of the permit and a subsequent request was made to turn the UV system off as it had met its testing requirements.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

For historical clarification and better understanding of the issues, we believe the following questions and thoughts should be considered and answered in deliberations on the issuance of the subject permit:

- a. Existing permit requirements and any changes or request for changes to the permit requirements that are driving the operation of the UV system.
- b. Under the subject permit, will the operation of the UV system be allowed to revert to the original stand-by operation? What are these requirements and justification for this?
- c. Is there flexibility to consider additional monitoring and alarms to allow the UV system to be in stand-by operation?
- d. Are there any requirements that would increase the energy consumption of the UV system? What are these requirements/
- e. If the public contact levels would not be impacted by turning off the UV system, would the operation only be required to meet upstream requirements?
- f. Are there any requirements for other operational changes that would consume more energy? What is the expected increase in energy consumption?
- g. Have the impacts (environmental and cost) of increased energy consumption been considered in the development of the subject proposed discharge permit?
- h. Has reducing the energy consumption of Sand Island facilities been incorporated into the development of the subject proposed discharge permit?

Response: In the Tentative Decision Document (TDD) regarding the Permittee's application for a 301(h) Waiver, EPA examined enterococcus results collected at various sampling stations in the receiving waters surrounding the facility's discharge point. They compared sampling results collected prior to the operation of the UV system with results obtained during the one year study. EPA concluded that "bacterial concentrations associated with the discharge of wastewater from the Sand Island outfall do not meet current water quality standards without disinfection."

The NPDES permit specifies enterococcus discharge limitations retained from the previous permit that the Permittee must meet. The permit does not, however, specify how the Permittee is to meet the limitations. The Permittee has discretion in determining the type of disinfection to use and when to use it as long as they can comply with the permit limitations.

2. Potential Public Safety Risks – Air and Water Emissions

- a. Have reviews been conducted to determine the potential health risk impacts of increased air emissions from power plants that are a direct result of increased electrical consumption to meet these permit requirements compared to the potential health risks? Hawaii Energy would appreciate reviewing any findings and conclusions from any reviews performed.

Response to Comments on Public Notice NPDES Permit and Tentative Determinations
for Sand Island Wastewater Treatment Plant
NPDES Permit No. HI 0020117
August 20, 2014

- b. Are there any conflicting requirements in this permit that would require the use of the UV system to meet one requirement (such as levels leaving the plant) without any impact to meeting other requirements (such as levels at measurement points of contact)?

Response: There have been no reviews conducted to determine the potential health risk impacts of increased air emissions from power plants that are a direct result of increased electrical consumption to meet these permit requirements compared to the potential health risks. We do not believe that using UV disinfection made it more difficult to meet other permit requirements.

3. Hawaii Energy Assistance

- a. Is there any item above that has not been reviewed and DOH would like to work with Hawaii Energy to determine a potential course of action to investigate further?
- b. Are there any other energy reduction modifications that Hawaii Energy could assess that would allow Sand Island to reduce its energy consumption while meeting the proposed permit conditions.

Response: The DOH is obligated to implement applicable water quality standards in NPDES permits for parameters for which the Permittee has demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. The DOH acknowledges that energy efficiency is an important issue, however, it is outside of DOH's jurisdiction to impose such considerations. We encourage Hawaii Energy to work directly with the Permittee to determine an energy-efficient way for the Permittee to meet NPDES permit requirements.